

“Dealing with volatile demand in tourism - how can marketing become more efficient and effective?”

Draft

**Ranking locations for the production of tourism experiences:
The “Lugano Tourism Indicator” of cities’ attractiveness.**

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Abstract

This paper proposes an indicator ranking destinations with respect to the vector of inputs they offer for household production of holiday experiences at a location. Tourists travelling to a specific city destination can do so for a large variety of activities. Therefore, a relevant indicator of attractiveness has to be based on a theory that explains tourist behaviour as a free combination of inputs, their chose a city destination simply becomes a location of production and a provider of inputs. As a consequence, the Lugano Tourism Indicator (LTI) will provide a measure of attractiveness combining the quantity and quality of inputs on the one hand and tourist segment specific weights representing the household production decision on the other. The production process is structured into three stages, i.e. “get there”, “stay there” and “live there”. Hence, the Lugano Tourism Indicator aspires to be an appropriate tool to evaluate the many components of a city’s attractiveness as a tourism destination, thus representing a valid support for its management in determining appropriate marketing strategies in different competitive frameworks. The Lugano Tourism Indicator model can be translated into a flexible and interactive benchmarking tool, which is able to render an overall overview of the city tourism market as well as an in-depth and tailor-made analysis of destinations’ competitive factors.

Introduction

The phase of maturity in which the tourism industry recently entered highlights the need for reaching higher specialization and quality in order to best fit consumer needs. Increasingly value-conscious customers will necessarily demand more and better product information and they will increasingly expect to negotiate tourism resources price and quality. The tourism market will thus become more and more demand-driven.

While the comprehension of the tourism phenomenon went further, insights analysis and forecasts are still conducted under uncertain conditions, since many of the exogenous and endogenous factors influencing the tourism market dynamics are not yet fully predictable. We can here mention exogenous factors with global impact, such as changes in the global framework due to decisions of international politics, acts of international terrorism, large scale natural disasters and so on. Political, social and economic issues at a local level also represent exogenous elements affecting the overall tourism market. Endogenous factors can be referred to as market related aspects, as for example the destination's competitive framework of reference and its positioning in the product life-cycle, and product endogenous factors, such as the fact that the tourism product is intrinsically a not homogeneous item. This makes its demand volatile and its supply impossible to identify within well defined borders thus validating the effort of managing such structural hindrance.

The volatility of the tourism products is evident. Tourists traveling to the same destination don't necessarily consume the same product, as it strictly depends on the kind of holiday (which can vary from the 'all-inclusive' form to the 'do-it-yourself' one), on their specific preferences in terms of and other factors, for example the weather. On the supply side, specific entropic and natural resources are fundamental aspects of a destination's tourism supply and are non renewable.

In this framework, the destinations' capability to be competitive relies on the quick identification of those tourism resources which represent a real competitive factor and on the capability of exploiting them with high flexibility. The first competence allows identifying outstanding products, while the second permits stakeholders reacting quickly and efficiently to endogenous and exogenous events. Destination management and marketing provides then the key knowledge to effectively make the most of such competences, if supplied with adequate supporting instruments, such as a consistent model for the identification and evaluation of tourism resources and their mix.

The LTI aspires to be such a valid tool for the identification of a destination's competitive factors. The indicator is based on household production theory as a behavioral background for explaining tourism choices. Household production theory, first introduced by Becker (1965), permits theoretically to distinguish between preferences (for activities, or holiday experiences in our case), quantity and quality of inputs provided (attractiveness of the location in terms of variables entering

our indicator) and the production function (weight that tourists attribute to the single factors in the production of their holiday experience). The usefulness of the household production concept for explaining tourism behaviour has been recognised by several authors in the past (e.g. Morley 1992, Papatheodorou 2001).

Recently, Tussyiadah et al. (2006) analyse multi-destination travel decisions using a Lancaster (1966) inspired model. The argument of the authors is that tourists with a preference for variety will travel to multiple destinations, and that linear combinations of destinations can be best represented by a Lancaster type of consumption technology. While this is an important insight, the reasoning cannot be applied to our context. Given the interest in explaining single destination trips but with multiple options of creating the experience, variety seeking will not consist in linear combinations of fixed alternatives, but in a more flexible production process at a specific location. The vector of characteristics defining a location (and measured in the LTI) does no longer define the activity of the tourist, but only the set of production factors at his or her disposal.

In what follows we will present the model, demonstrate first results of the LTI and draw some conclusions.

The model

The Lugano Tourism indicator is a supply-oriented instrument for the benchmarking of tourism destinations according to their attractiveness.

The basic assumption of the Lugano Tourism Indicator model is that destinations' competitiveness derives from their attractiveness, since this is the main force leading a tourist throughout its decision-making process, thus determinant in the final choice of the destination. Attractiveness is defined as the mix of the tourism resources required by the tourists during their holiday experience. Tourism resources are defined as the products and services produced in and for a destination and evaluated in their characteristics of quality, price, innovation and integration.

The LTI consists of a vector \mathbf{X} of quantities/qualities of tourism services m offered in a city k and another vector of weights a attributed to it by agents i . The vector is then calculated as a simple weighted sum according to (1): Empirically, the X 's will be collected from various sources while the a 's can be gathered either directly from consumers or, as in our case, from tour operators and destination managers.

$$\mathbf{LTI}_i = \sum_m a_{mk} X_{mk} \quad (1)$$

This evaluation function, which is akin to a preference for variety utility function, can be derived from a household production model where individuals maximize the quantity of a tourism experience e in a city under the constraint of the holiday budget. The experience e is produced with

tourism services (the X 's) and time. Time is obviously a key element in a Becker framework, and of relevance in a tourism context. However, as our indicator does not (yet) contain information on time use, the following reasoning is based on service inputs only. The model developed below permits an economic interpretation of the weights (a 's) attributed to the X 's in the LTI (1). Tourists are assumed to decide in which city destination to produce their specific experience Z_{ike} . This decision is based on the production conditions, i.e. the maximum of Z_{ike} that can be produced there, given the holiday budget and the prices and productivities of services (see below). This destination choice could be modeled in a standard discrete choice framework. However, this model is not made explicit here, as we concentrate on the production conditions in specific destinations and hence the pure household production model.

The simple household production model for individual i , location k and experience e is as follows:

$$\text{Max} \quad Z_{ike} = Z_i(\mathbf{X}_k) \quad (2)$$

$$\text{s.t.} \quad \sum_m P_{mk} X_{mk} = M \quad (3)$$

where:	e	type of experience
	m	type of service
	k	destination
	Z_{ike}	holiday experience
	X_{mk}	tourism service
	P_{mk}	price of tourism service
	M	holiday budget

The Lagrangian for the above model is:

$$L_i = Z_e(\mathbf{X}) + \lambda (M - \sum_m P_{mk} X_{mk}) \quad (4)$$

and the FOCs:

$$(\delta Z_e / \delta X_{mk}) = \lambda P_{mk} \quad (5)$$

completed by the constraint (3).

The implications with regard to the allocation of monetary resources to two tourism services (1, 2) for producing a specific experience (Z_e) are the following:

$$(\delta Z_e / \delta X_1) / (\delta Z_e / \delta X_2) = P_1 / P_2 \quad \text{or} \quad P_1 / MP_{1e} = P_2 / MP_{2e} \quad (6)$$

where MP stands for the marginal product. Hence, the factor expenditures for the two services used as inputs for the same experience must be equal at the margin. Obviously, this result is equivalent to a standard household utility maximization model. The difference lies in the interpretation of the X 's as factors and their impact as productivity, rather than as marginal utility. The intuition becomes more obvious if we substitute the generic production function by a Cobb-Douglas form as in (7).

$$Z_e = X_1^\alpha X_2^\beta \quad (7)$$

As is well known, the (factor) demand for X_1 equals its expenditure share (8).

$$X_1 = \frac{\alpha}{\alpha + \beta} \frac{M}{P_1} \quad (8)$$

This expenditure share can be interpreted as the weight a_1 attributed by a tourist to a specific service for producing holiday experience e . As can be seen, the importance a tourist will give to a tourism service depends on the productivities of these factors, its price, and the money budget. A tourist will attribute more weight to a service, the higher her budget, the lower the price, and the more a specific service contributes to the experience.

Empirical model and pilot implementation

For the empirical purpose of constructing our indicator, the holiday production process is subdivided into three main traveling stages according to the specific response to tourists' needs along the holiday experience. The first stage is labeled the 'get there' stage, since it refers to all the activities which are accomplished before arriving in the destination and concerning the tourist need to access, both virtually and in reality, the destination. The intermediate stage is referred to as the 'stay there' step and interests the hospitality services of accommodation and food and beverage supply, with reference to those basic needs deriving from the condition of being a tourist. The third stage comprehends the remaining holiday characteristics which fulfill secondary holiday needs, such as the sightseeing, entertainment, shopping and so forth. At any stage of the production process, the tourist can decide how to allocate her/his own resources of time and money, in order to *make* the holiday experience or to *buy* integrated parts of it on the market, as in the case of tour operator's package. As a result, the destination is not conceived as the final product to purchase, but the location of production of the holiday experience

The intuition of a household production model for the use of local tourism resources allows reaching the two goals previously identified as determinant for an effective tourism management and marketing. Through consumer insight studies it is possible to determine demand of tourists (or segments) for the measured supply of specific resources (the weights a), thus clearly identifying a destination's competitive factors. Constructing an index across destinations it is possible to compare the mix of characteristics of a city in a benchmarking exercise with effective or potential competitors, for simulation purposes or, as an interior analysis of the destination's strengths and weaknesses (SWOT).

The empirical application of the LTI indicator approach overcomes some limits intrinsic in current approaches to the destination's management and benchmarking. Conceiving a place as the location for the production holiday experiences rather than the product itself, the LTI model

provides the necessary framework for treating a single destination as a multiple tourism products (tourism experiences), which can be created or distributed by different players (tour operators, DMOs, tourists, etc.). This approach overcomes the restrictions necessary to the assumption that a destination supplies only an unvaried set of holiday experiences and that it can be centrally managed, as a firm. By shifting the focus on the relationships among tourism resources rather than on the number and kind of them available at a destination, the LTI succeeds in overcoming the rigidity of benchmarking models comparing destinations as *a priori* fixed products or on the basis of standard indicators, such as the number of overnights and arrivals. Including the tourist as potential holiday maker it also overcomes limits due to the limited control local managers have on the supply of tourism related resources.

In order to test the potential applications of the LTI, a pilot phase focused on the city tourism destinations in Europe has been undertaken in 2005. The pilot has been elaborated as proposal for a shared definition of cities' attractiveness as tourism destinations and its main contribution pretends to be the provision of a common conceptual framework, on which the definition of statistic standards for the destination level can be based. The final goal is the achievement of a higher comprehension of the city tourism market.

The first step of the pilot concerned the identification of the characteristics describing the tourism product in its three stages of get, stay and live there (see Table 1).

Table 1: Overview on variables

STAGES	SOURCE OF INFORMATION	TRAVEL TO/FROM	STAY	FOOD	ATTRACT-IONS	IN LOCO ENTERTAIN- MENT
INPUT DEFINITION	Formal tourism sources, other tourism sources, hearsay.	Air, road, rail, water transport; public and private means; inter- and extra-urban	Tourism accomm. second houses, friends & relatives	Food- & beverage-serving services, food stores, second house, friends & relatives	Attractions	Other tourism specific products and services
VARIABLE	Formal tourism sources	Extra-urban public transport	Tourism accomm.	Food- & beverage-serving services	Cultural and architectural attractions	Shopping facilities, dance industry services, events services, tourist information services Shopping malls and open-air markets, bars, cafés and discotheques, mega- and minor- events, city cards
LTI'S INPUT DEFINITION	DMOs website	Air transport	Hotels	Restaurants	UNESCO Heritage sites, contemporary architecture famous buildings	

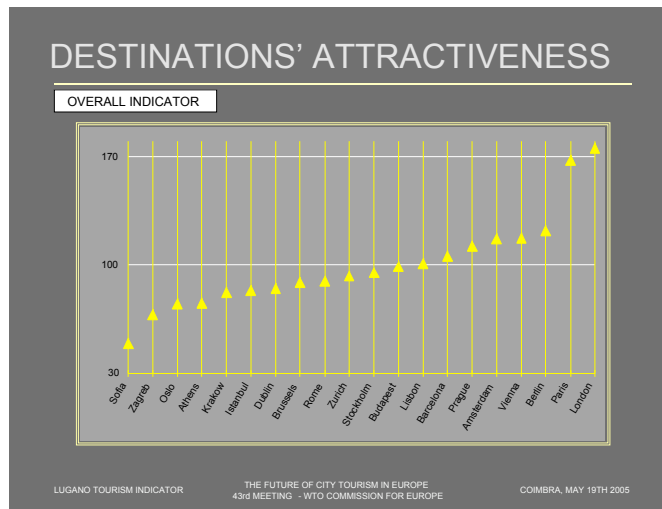
We identified six main factors which explain a destination's attractiveness, namely information, accessibility, accommodation, food and beverage service, attractions and entertainment. Moving

from the most comprehensive set of tourism resources, the one provided by the UNWTO in its System of Tourism Statistics, we narrowed it down to a manageable number of variables by contextualizing the benchmarking model in the urban tourism market, with reference to European cities and the international demand only. The choice of Europe as first area of study is justified by its leading role in the worldwide tourism industry and the availability of data. The focus on the city market is explained by the relevance this product has and will have for the future development of European tourism and by its characteristics (short duration and location identification) which let us free from taking further assumptions or restrictions in the empirical test. As a result we identified a set of 64 variables.

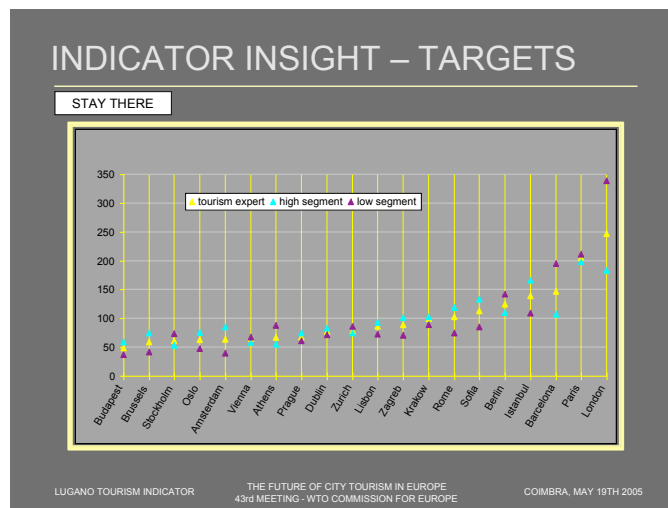
The main problem faced during the empirical test was the availability of the sources. Although Europe has the most advanced statistics systems for tourism, at the state of the art quantitative data for urban destinations are not yet comprehensive or comparable, since the existing monitoring tools, such as the TourMIS (ANTO and ETC), the European Travel Monitoring (IPK) and the EUROBAROMETER (European Union), don't collect homogeneous information. We overcame this barrier, which will be solved with the time, by using secondary sources. Our believe is that efforts for further development of the Lugano Tourism Indicator are justified by the intention of the main tourism organizations, worldwide and in the continent, toward the homologizing of statistics and the filling of missing information also for the micro-level, thus allowing us to apply the model to a reliable dataset.

The pilot showed that the Lugano Tourism Indicator is a flexible and interactive tool, with which it is possible to accomplish analyses at different degrees of depth according to the aggregation level and to the data sub-set selected. Synthetic index(es), deriving from the aggregation of the normalized variables at different levels (overall or sub-levels) can render the ranking of destinations according to our concept of attractiveness; weighting the data, it is possible to obtain the ranking(s) according to a tailor-made definition of attractiveness which corresponds to the management strategy or the customer segment preferences (see graphic 1). The weight system allows the simulation of varying strategic frameworks as support for strategic planning (see graphic 2). Insight analysis, such as SWOT analysis of the destination competitive factors are also an interesting output of the indicator (see graphic 3).

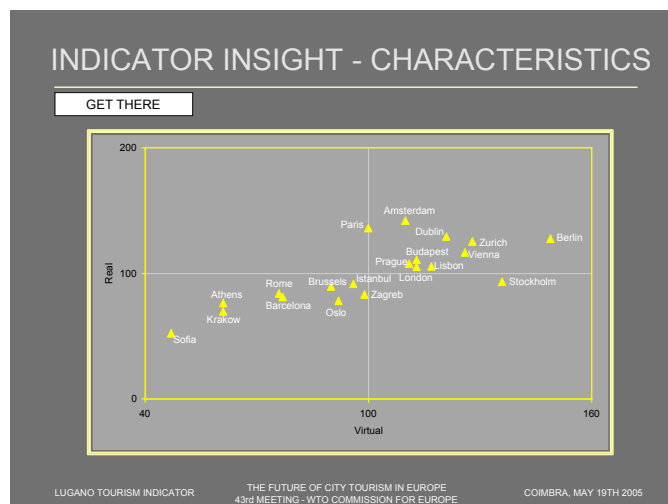
Graphic 1: overall ranking of destinations



Graphic 2: destinations ranking in terms of hospitality supply – weighted results for tourism experts, high-spending and low-spending tourists.



Graphic 3: SWOT analysis in terms of virtual and real accessibility of the destination



Conclusions

The theoretical intuition of a city as a location for household production of the tourism experience permits the construction of a benchmarking with characteristics required by the actual framework and not yet present in similar tools.

By shifting the focus from the comparison among destinations to the comparison of the relations existing among resources, LTI allows comparing varied scenario and renders a more realistic picture of the tourism consumption.

The identification of the three traveling stages, which cluster the tourist needs during the holiday experience, is also the premise for interesting applications in the comprehension of destinations' choice. The next steps of our research are intended to include them in the theoretical model.

Afterwards we mean to test alternatives to the weighted aggregation, in order to identify the most suitable methodology (-ies) for data interpretation and the identification of market intelligence instruments, supporting the destination management in its strategic decisions.

References

Becker, G. S. (1965) A Theory of the Allocation of Time *The Economic Journal*, **75**:493-517.

Lancaster, K.J. (1966) A New Approach to Consumer Theory *Journal of Political Economy*, **74 (2)**: 132-157.

Morley, C.L. (1992) A Microeconomic Theory of International Tourism Demand *Annals of Tourism Research*, **19**: 250-267.

Papatheodorou, A. (2001) Why People Travel to Different Places *Annals of Tourism Research*, **28**: 164-179.

Tussyadiah, T.K. (2006) A Model of Multidestination Travel: Implications for Marketing Strategies *Journal of Travel Research*, **44**: 407-417.

UNWTO (2001). *System of Tourism Statistics (Sts) and its links with the General Statistical System* [web]. Retrieved May, 28th 2006: http://www.world-tourism.org/statistics/basic_references/index-en.htm.

UNWTO (2002). *Destination Management Think Tank*, [web]. Retrieved May, 29th 2006: http://www.world-tourism.org/education/council/news/think_tank.ht